magazine. In *Good Words* Sir Robert Ball gives the second of a series of articles on "The Great Astronomers," the subject of his biographical sketch being Kepler. E. M. Caillard founds an excellent article on "Matter," and manages to impart clear and accurate notions on the universal properties of extension, inertia, unity, indestructibility and structure.

We note in *Chambers's Journal* "The Science of Colouring in Animals," "The Sargasso Sea," "Spiders and their Habits," and "The Identification of Habitual Criminals." Mr. A. Binet's "Mechanism of Thought," in the *Fortnightly*, is chiefly concerned with psychology and hypnotism. Honour is done to the late Prof. Robertson Smith by Mr. J. G. Frazer in the same magazine. Prof. Victor Horsley replies in the *Humanitarian* to the paper on vivisection contributed by Bishop Barry to the April number. The seventh of Mr. Phil Robinson's articles on "The Zoo Revisited," in the *English Illustrated*, deals with the animals in the "Small Cats' House." In the same magazine, Mr. W. B. Tegetmeier briefly describes the scope of his forthcoming book on horses, asses, and zebras. The May number of the *Nautical Magazine* contains an article in which Capt. Wilson Barker points to the study of "Natural History" (a term used to cover the ground of physiography) as a recreation for sailors.

In addition to the magazines mentioned in the foregoing, we have received the *Contemporary* and *National* reviews.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Provost of King's, Mr. A. Austen Leigh, has been re-elected Vice-Chancellor for the ensuing year.

St. John's College has carried off both the Smith's prizes this year; the winners are Mr. S. S. Hough and Mr. H. C. Pocklington, third and bracketed fourth Wranglers respectively in 1892, and first class in Part II. of the Mathematical Tripos, 1893.

Candidates for the University Lectureship in Invertebrate Morphology, vacated by Prof. Hickson, are requested to send their names to the Vice-Chancellor by June 9. The stipend is £50 a year.

Prof. Foster has been re-appointed a Manager of the Balfour Studentship Fund for the ensuing five years.

Mr. J. J. Lister, of St. John's, is to occupy the University's table at the Plymouth Biological Laboratory this summer.

The first examination for Diplomas in Agricultural Science will be held on July 2. Candidates are to send their names and fees to the Registrary by June 13.

The next examination for Diplomas in Public Health will begin on October 2. The names of candidates, with their certificates, are to be sent to the Registrary by September 18.

Sir G. G. Stokes, Dr. Sandys, and Prof. Robinson, are to represent the University at the Bi-centenary Festival of the University of Halle, to be held next August.

The following Examiners have been nominated by the Special Board for Medicine:—In Medicine, Dr. W. H. Dickinson, Dr. J. K. Fowler, Dr. L. Humphry, Dr. J. F. Payne; in Midwifery, Dr. W. S. A. Griffith, Dr. J. Phillips; in Surgery, Mr. H. H. Clutton, Mr. F. Treves, Mr. H. Marsh, Mr. W. H. Bennett.

Mr. H. Woods, of St. John's College, has been appointed an Elector to the Harkness Scholarship in Geology and Palæontology.

SCIENTIFIC SERIALS.

American Meteorological Journal, May.—The principal article is "Meteorology and Geodesy," by Prof. C. Abbe. It contains tables showing the variations in the force of gravity over the North American continent and the Atlantic ocean and their effect on the mercurial barometer. The author points out that there is a local attraction of gravitation that is less over the continents than over the oceans, and probably, on the average, less in the northern than in the southern atmosphere; these differences must be allowed for, in combination with the effects due to the density of the atmosphere and to centrifugal force. The principal resistance to the motion of the atmosphere originates in the connective processes that force stagnant air to mix with air in motion; this convective friction is quite independent of viscosity, which has been generally introduced into the formulæ for atmospheric motion, and it is much more effective. The most important subject for the meteorologist to study is these convective mixtures and the resistances or accelerations that result therefrom. The author considers it unnecessary to take up the minute irregularities treated of in this paper, until after the study above referred to has explained the larger part of the irregularities of atmospheric motions. The same journal contains some very useful suggestions by Prof. Abbe, on the various meteorological problems that might be taken up by mathematical students.

Bulletin de la Société des Naturalistes de Moscou, 1893, Nos. 2 and 3.—On the copulation organs of the males of the genera *Crosica*, *Melecta*, *Pseudomelecta*, &c., by General O. Radoczkowsky (in French, with four plates).—Contribution to the pathologic evolution of the nervous system, by Mme. O. V. Leonova, being a description of a complicated case of total anencephaly in a human embryo.—A case of seeming hermaphroditism with *Perca fluviatilis*, by N. Iwanzoff.—The Tithonian deposits of Theodosia, Crimea, by O. Retowski (in German, with six plates). This elaborate monograph contains the description of sixty-five fossil species from those little-known beds—no less than thirty-one species and one genus being new.—Palæontological data for the vertical subdivision of the Sarmathian deposits of South Russia, by A. P. Ivanoff (in Russian, summed up in French). The following five zones are distinguished:—(1) Zone of *Cerithium mitrale*, *mediterraneum*, and *rubiginosum*; (2) *C. disjunctum* and *mitrale*; (3) *C. nodosoplicatum*, *disjunctum*, and *mitrale*; (4) *C. rubiginosum*, *nodosoplicatum*, *disjunctum*, *mitrale*, var. *bicostata*, and *nympha*; (5) *C. mitrale*, var. *bijuga*; and (6) *C. disjunctum*. The beds overlying the above are characterised by the absence of *Cerithes*, and the appearance, for the first time, of *Trochus podolicus*, and a great development of *Mactra ponderosa*. The uppermost layers of the series contain no *Trochus podolicus*, while other species of *Trochus* and *Turbo* appear in great numbers.—The birds of Moscow, by Th. Lorenz, continued.—Note on J. D. Chersky, with a complete list of his works, by A. Iwanowski.—On a new species, *Parus transcaspius*, by N. Zaroudnoi (in French).

Memoirs of the Kazan Society of Naturalists, vol. xxvi. Nos. 4, 5, and 6.—On the theory of the root-force in the plant, by Dr. Alexis Horvath. The manometric measurements of the author prove the existence of a rarefaction within the plant, and he therefore considers the vessel of a plant as a tube, in which we should have a succession of drops of a liquid, separated from each other by bulbs of air. The heating of the gas and its expansion acts in the tube as the piston of an aspirating pump.—On the consequences of the decapitation of the plant on some of its organs, by W. Rothert.—On the supply of water to Kazan, by Prof. Stscherbakoff.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 19.—"On Variations observed in the Spectra of Carbon Electrodes, and on the Influence of one Substance on the Spectrum of Another." By W. N. Hartley, F.R.S.

Certain "lines" in Hartley and Adeney's spectrum of carbon are attributed to cyanogen in a recent paper by Eder and Valenta.[1] These lines are not produced by cyanides such as potassium cyanide or mercuric cyanide. Graphite electrodes immersed in solutions show beautiful groups of lines which coincide with the edges of certain bands in spectra of the flame of burning cyanogen. These bands can be recognised in the groups iii. and iv. on the spectra photographed by Kayser and Runge.

The origin of these coincident portions of spectra, namely, from the combustion of cyanogen and from carbon electrodes in saline solutions, taken in conjunction with the fact that they are not rendered by cyanides, makes it doubtful whether the cyanogen spectrum is not due to elementary carbon, as first advocated by Marshall Watts. There are other facts and circumstances which somewhat support this doubt. First, variations have been observed in the spectrum of carbon which cannot be easily accounted for. Secondly, the effect of one substance on the spectrum of another, which I have recently observed, not only strengthens weak lines, but in certain cases brings a new series of lines into view. Thirdly, the spectra of mixed vapours have been shown to be different from the spectra of the substances by themselves (Liveing and Dewar, "Roy. Soc. Proc.," vol. xxxiv. p. 428); and, fourthly, the influence of the strong lines of an element on adjacent weaker lines of another substance is to strengthen the weaker lines in some cases, but almost to obliterate them in others.

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[1] "Line Spectrum of Elementary Carbon and the Ultra-violet Spark Spectrum of Wet and Dry Wood Charcoal" (Vienna: "Akad Wiss. Denkschriften," vol. 60, 1893).

Variations in the spectrum of carbon as observed in different circumstances have been carefully examined and described. In order to test the probability of the carbon and nitrogen spectra being subject to variations when the two elements are together in the spark or flame, it is necessary to consider the effect of one spectrum on another when the two are produced simultaneously from quite different materials.

In the oxyhydrogen flame the water-vapour lines are prominent, but only two groups are visible in the spectrum under normal conditions, and with an exposure of half an hour. If, however, some sulphur be burnt in the flame, the conditions being otherwise unchanged, then the spectrum, in addition to a band of continuous rays and flutings characteristic of sulphur vapour, shows the water-vapour lines wonderfully strong, with groups extending beyond those portions of the spectrum usually photographed, and not only are the lines distinct, but dense, as if their radiating power or the chemical action of their radiations was greatly increased. This does not arise from the continuous spectrum merely overlapping and apparently strengthening the water-vapour lines, since new groups of lines came into view which were too feeble to be visible on the other photographs. Sulphur is not the only substance which affects this spectrum; for instance, the banded spectrum of magnesia and the spectrum of lime also appear to intensify it.

It is probable that something similar takes place with regard to carbon; we know that the spectrum is modified by the surrounding nitrogen of the atmosphere, and the rays of carbon increase the intensity of the nitrogen rays adjacent to the carbon lines, the effect being increased in the case of the spark by a saturated solution of zinc or calcium chloride.

The facts here set forth certainly favour the view that the lines in Hartley and Adeney's spectrum of carbon are the lines of the element and not merely the edges of cyanogen bands. Finally, the carbon spectra of Eder and Valenta differs from that published in the *Journal* of the Chemical Society, vol. xli. p. 91; the graphite spectrum, No. 10, on plate ii., yields neither the group III. nor group IV. of cyanogen as depicted in spectrum No. 4 of the photogravure plate illustrating Eder and Valenta's paper.

"Experimental Determination of Poisson's Ratio." By C. E. Stromeyer.

The experiments with which this paper deals were carried out between the years 1883 and 1886 by Prof. Kennedy and the author, with an instrument which the latter had originally designed for measuring local strains in metal structures, but which proved itself to be so exceedingly sensitive that it was capable of being applied to the measuring of the cross contraction of test pieces while these were subjected to a longitudinal pull, thus providing the means for measuring Poisson's ratio direct.

The conclusions drawn from the experiments with nineteen samples are:—

(1) That Poisson's ratio is not a constant value for all materials.

(2) That mechanical treatment (cold rolling and annealing) of the metal alter it.

(3) That Poisson's ratio is sometimes a function of the stress.

(4) That Poisson's ratio, as found by direct measurement, is not the same as that found by comparing torsion and tension experiments.

May 24.—"Some Voltaic Combinations with Fused Electrolytes and Gaseous Depolariser." By. J. W. Swan.

In this paper are described several voltaic combinations in which fused electrolytes and a gaseous depolariser were used. The electrodes were the same in all the experiments, viz. lead in a fused state as the positive, and carbon as the negative. The electrolyte used in the first experiments was a fused mixture of KCl,NaCl, but this was changed for one of $PbCl_2$. The depolarising gas used in all the experiments was chlorine, and was so applied as to chemically act on the electrolytic products formed at the carbon pole. Several methods of applying the gas were employed: by forcing the gas through porous carbon, by making the carbon pole tubular and feeding the chlorine through it, and by nearly wholly surrounding the carbon pole by an atmosphere of chlorine.

The condition found to be most necessary for successful depolarisation was *to alternately expose the carbon pole to the action of the gas and electrolyte in rapid succession.* During the electrolytic action, the lead dissolves as chloride of lead, and lead is deposited on the carbon pole, but is immediately reconverted to chloride by the action of the chlorine gas. The theoretical E.M.F. corresponding to the union of Pb and Cl_2 is 1·7942 volts, the highest obtained was 1·40 volts, this lower E.M.F. was probably due to the incomplete solution of the lead at the carbon electrode.

A noticeable feature of this kind of cell is the very low internal resistance, which makes it possible to obtain a large current density with comparatively small electrodes. In one of the experiments a current of 1·0 ampère was given with an area of the carbon of 10 to 12 sq. cm. It was also observed that the internal resistance, and at the same time the polarisation, *decrease*, when the electrical output *increases*, and that the cell gave an almost constant effect. The best results were obtained with small cells, the action of the chlorine being then more effective than when larger cells were employed. Experiments were also made with oxygen as a depolariser, but a description of them is left for a future paper.

Physical Society, May 25.—Prof. A. W. Rücker, F.R.S., President, in the chair.—Prof. W. Ramsay, F.R.S., read a paper on the passage of hydrogen through a palladium septum, and the pressure which it produces. After referring to the analogy between osmotic pressure of solutions, and the behaviour of hydrogen and palladium, the author described the apparatus he had used in his experiments, and showed it in operation. A vertical platinum tube provided with a palladium cap is enclosed within a glass vessel through which hydrogen or other gases may be passed, and outside the glass vessel is a vapour jacket, by means of which a constant temperature can be maintained. The lower end of the platinum tube communicates through a graduated capillary tube, with adjustable manometer, which enables the volume of the enclosed gas to be kept constant. Great precautions were taken for ensuring purity and dryness of the gases used. After filling the palladium and platinum tube with dry nitrogen at atmospheric pressure and the desired temperature, hydrogen was passed through the glass vessel. Some of the hydrogen permeated the palladium walls, thus increasing the pressure inside. After some time (usually an hour or so) the pressure attained a steady value, and the total increase was then observed. Experiments were made with air, nitrogen, nitric oxide, nitrous oxide, carbon dioxide, carbon monoxide, and cyanogen in the palladium tube, and in some cases the hydrogen was diluted with nitrogen. In all cases the maximum pressure of the hydrogen within the tube was less than that of the hydrogen outside the tube, as will be seen from the following table, which shows the ratio of these pressures under various conditions:—

Gas originally inside tube.	Gas passed outside tube.	Temp.	Ratio $\frac{\text{Internal hydrogen pressure}}{\text{External hydrogen pressure}}$
Nitrogen	Hydrogen	280 C.	0·9053
,,	,,	335	0·8984
,,	,, 50°/₀(rest N)	,,	0·9362
,,	,, 25 ,, ,,	,,	0·9344
Carbon Dioxide	Hydrogen	280	0·9621
,, Monoxide	,,	,,	0 9545
Cyanogen	,,	,,	0·9693

After the palladium had been used once or twice it became coated with mercury (vapourised from the manometer), and lost its permeable properties. It was found necessary to heat the tube to remove the mercury, and then dissolve off the oxide of palladium thus produced, after each experiment. The permeable nature of palladium was found to depend greatly on the temperature, for at 232° C. the passage of hydrogen was so slow that the internal pressure was still rising after ten days; at 330° the passage was very rapid. An attempt to use the apparatus for giving a continuous indication of the amount of hydrogen in coal-gas failed because the palladium did not retain its activity sufficiently long. Other experiments showed that nickel is impervious to carbon monoxide. In the latter portion of the paper the author discusses the various "so-called" explanations which have been given of the phenomena, but finds none satisfactory. Experiments on the absorption of gases by platinum and other metals are in progress with a view to the further elucidation of the subject. Mr. Mond thought the fact that rise of temperature accelerates diffusion, tended to confirm Graham's view that the gases pass through openings in the solid, for increase of temperature would widen any pores which might exist in the metal. The President inquired whether the author's argument against the possibility of palladium hydride condensing in the pores of the metal, because of its being unstable at the temperatures employed, would be affected by the fact of water being capable of existing in contact with glass at temperatures much above boiling point. In reply Prof. Ramsay said the President's suggestion might be true, but if so another condition must be fulfilled, viz. that the hydrogen molecules must be split up into the atomic or *nascent* state.—A paper on the relations of pressure, volume, and temperature of rarefied gases, by Prof. W. Ramsay, F.R.S., and Mr. E. C. C. Baly, was read by the latter. In the first part of the paper a historical summary of previous researches on the subject is given, and the chief sources of error pointed out. The method employed by the authors was to have two McLeod gauges connected with a pump, and arranged so that both could be trapped under exactly the same pressure. One of the gauges was surrounded by a vapour jacket at about 130 C., whilst the other was cold at about 13° C. After both were trapped, the hot gauge was allowed to cool and the readings of both taken. From these observations the coefficient of expansion of the gas used could be calculated. The experiments also served as tests of the reliability of the McLeod gauge under different conditions. For air and carbon dioxide the gauges proved quite unreliable, whilst for hydrogen they were very satisfactory. With carbon dioxide the surface condensation was so large as to make the observations worthless, but hydrogen suffered no condensation between pressures of 650 mm. and 0·000076 mm. Great difficulty was experienced in filling the gauges with pure hydrogen, but when accomplished the expansion was found to be normal ($\frac{1}{273}$) down to 0·4 mm pressure, and diminished to $\frac{1}{300}$ at 0·07 mm. Oxygen, however, gave a coefficient of $\frac{1}{261}$ at 5 mm. pressure, $\frac{1}{250}$ at 2·5 mm., and $\frac{1}{233}$ at 1·4 mm. At 0·7 mm. its behaviour was most erratic, there being as much as fifteen times the amount of gas trapped in the gauge at one time as at another. This confirms C. Bohr's observations on the anomalous behaviour of oxygen about this pressure. For nitrogen the values of the coefficients found were $\frac{1}{300}$ at 5 mm., $\frac{1}{304}$ at 1·1 mm., and $\frac{1}{342}$ at 0·6 mm. At small pressures the elasticities of hydrogen, nitrogen, carbon dioxide and air increase with decrease of pressure, but in oxygen the reverse holds. Examining the consequences of this increase of elasticity in the light of the kinetic theory of gases the authors point out that it means an increase of internal energy, and suggest that this may be the the cause of phosphorescence in high vacua. The President announced that the discussion on the last paper would be taken at the next meeting, after proofs had been distributed to members.

Chemical Society, May 3.—Dr. Armstrong, President, in the chair.—The following papers were read.—The structure and chemistry of the cyanogen flame, by A. Smithells and F. Dent. The flame of cyanogen burning in air consists of an inner cone of a peach-blossom tint surrounded by a blue-grey mantle. With a small air-supply the only products of combustion in the interconal gases are carbon monoxide and nitrogen with small proportions of nitrogen oxides and carbonic anhydride; the quantity of the latter constituent increases as the air-supply increases. On igniting dry cyanogen—the flame being fed with dry air—and separating the two cones in the usual way, the outer cone becomes extinguished; this agrees with Dixon's observation that a mixture of dry carbon monoxide and air is not explosive.—The results of measurements of the freezing points of dilute solutions, by H. C. Jones. The author defends his work from Pickering's recent criticisms, and attacks Pickering's method of plotting the results of freezing point determinations.—The conditions in which carbon exists in steel, by J. O. Arnold and A. A. Read. The authors confirm the existence in steel of a carbide having the composition Fe_3C; it is isolated as a greyish-black powder from normal steel, and as bright silvery plates from well-annealed steel. A highly manganiferous steel contained a double carbide of the composition $Fe_7Mn C_3$.—The "cis" and "trans" modifications of tetramethylenedicarboxylic acid (1 : 2) and pentamethylenedicarboxylic acid (1 : 2), by W. H. Perkin, junr.—Hexamethylenedibromide, $BrCH_2 . CH_2 . CH_2 . CH_2 . CH_2 . CH_2 Br$, by E. Haworth and W. H. Perkin, junr. The authors have prepared chloromethoxypropane, $Cl (CH_2)_3 OMe$; this, when treated with potassium in benzene solution, yields a substance of the composition $MeO (CH_2)_6 OMe$, which is converted into hexamethylenedibromide on heating with hydrobromic acid.—α-Hydrindone and its derivatives, by F. S. Kipping.

Linnean Society, May 24.—Anniversary meeting.—Prof. Stewart, President, in the chair.—The Treasurer presented his annual report duly audited, and the Secretary having announced the elections and deaths during the past twelve months, the usual ballot took place for new members of Council, when the following were elected in the place of those retiring:—Dr. John Anderson, F.R.S., C. B. Clarke, F.R.S., Prof. J. Reynolds Green, Arthur Lister, and Albert D. Michael. On a ballot taking place for the elections of President and officers, Mr. Charles Baron Clarke, F.R.S., was elected President, and the officers were re-elected. The Librarian's report having been read, and certain formal business disposed of, the retiring President delivered his annual address, taking for his subject "The Locomotion of Animals, with special reference to the Crustacea." On the motion of Dr. D. H. Scott, seconded by Mr. Howard Saunders, a unanimous vote of thanks was accorded to the President for his able address, with a request that he would allow it to be printed.—The Society's gold medal was then formally awarded to Prof. Ernst Haeckel, of Jena, and was received on his behalf by Mr. W. Percy Sladen, who read a long and excellent letter of acknowledgment and thanks, which was prefaced by an expression of the writer's regret at his inability to come to England to receive the medal in person.

CAMBRIDGE.

Philosophical Society, May 14.—The Master of Downing College, Vice-President, in the chair.—Mr. S. J. Hickson exhibited a specimen of *Chelifer* from Celebes, showing a remarkable sense-organ on the coxæ of the last legs.—Mr. A. E. Shipley read a note on *Filaria immitis.*—On variations in the larva of *Asterina gibbosa*, by Mr. E. W. MacBride. The larva of *Asterina gibbosa* when fully developed possesses five cœlomic cavities, a median anterior and two pairs of posterior cavities, which suggest a comparison with the similarly arranged spaces in the *Balanoglossus* larva, a suggestion which derives further support from the fact that in both cases the anterior cavity opens to the exterior by a pore situated on the left side, called the madreporic pore, in the *Asterina* larva. Two cases of a similar pore on the right side were recorded, but the variations described chiefly concern the more anteriorly situated of the paired cavities. The left of these forms the water vascular system of the adult. In one instance a pore was observed leading from it directly to the exterior, recalling the collar pore of *Balanoglossus.* The right usually remains rudimentary, but several instances are described of its presenting in greater or less degree the features normally exhibited by its fellow on the left. These variations are to be interpreted, taking into consideration the bilateral symmetry of Echinoderm larvæ, as atavisms.—On a new method of preparing culture media, by Dr. Lorrain Smith. The author described a method for preparing media suitable for the cultivation of bacteria. The principle of the method consists in the addition of a small percentage of alkali to fluids which contain proteid such as egg-white and serum of blood. The fluid is then heated to the boiling-point or over it in the autoclave. By this means it is converted into a clear transparent jelly. It is then a medium suitable for the growth of a large variety of germs.

PARIS.

Academy of Sciences, May 28.—M. Lœwy in the chair.—Observations of Brooks' comet, 1893, 6 (October 16, 1893), and of Wolf's planet (AX, 1894), made with the great equatorial of Bordeaux Observatory, by MM. G. Rayet, L. Picart, and F. Courty. Note by M. G. Rayet.—On solar faculæ, by Prof. George E. Hale. A rejoinder to some remarks by M. Deslandres on a paper published by the author in *Knowledge.*—Observations of the sun made at Lyons Observatory during the first quarter of 1894, by M. J. Guillaume. From the observations quoted, March shows a decided minimum of spot surface more marked than the minimum of November 1893; the maximum for spots was in August 1893, and for faculæ in May of the same year.—On four related solutions of the problem of the transformation relative to the elliptic function of the second order, by M. F. de Salvert.—On the limitation of degree for the algebraical integrals of the differential equation of the first order, by M. Autonne.—On the properties of groups of substitutions of which the order is equal to a given number, by M. E. Maillet.—On the integration of partial equations of the second order with two independent variables, by M. J. Beudon.—On uniform integrals of partial differential equations of the first order and *genre zéro*, by M. Petrovitch.—Variation of the surface tension with the temperature, by M. H. Pellatt. A mathemetical paper leading to the conclusion that the surface tension is a linear function of the absolute temperature.—On the capacity of the capillary electrometer, and on the initial capacity of mercury, by M. E. Bouty.—Method for the direct measurement of electromotive forces in absolute value, by M. C. Limb. The method depends on the direct comparison of the unknown electromotive force with an induced electromotive force in a case where the latter may be calculated.—*Résumé* of meteorological observations made at Joal (Senegal) by the mission sent by the Bureau des Longitudes to observe the total eclipse of the sun on April 16, 1893. A note by M. G. Bigourdan.—On the detection of hydrochloric acid, by MM. A. Villiers and M. Fayolle.—A comparative study of the nitrobenzoic acids, by M. Oechsner de Coninck. The reactions of these acids with aqua regia, dilute chromic acid, dilute hydrochloric acid, dilute nitric acid, dilute alcohol, and acetone have been further studied. Just as was found for their physical properties, two of these acids yield similar reactions, and differ from the third.—On the constitution of licareol, by MM. Ph. Barbier and L. Bouveault. The formula adopted now for licareol is the following:—

$$CH_3 . C(CH_3) : CH . CH_2 . CH(CH_2OH) . C(CH_3) : CH_2.$$

Athough licareol has given nearly the same products of oxidation as geraniol, the corresponding aldehydes appear to be different, as they give compounds with para-amidophenol having different melting points. Licareol is active, geraniol is inactive, and may possibly be a racemic form of the alcohol.—On the melting points of some phenols and their benzoates, by MM. A. Béhal and E. Choay. A tabular statement.—On the rectification of alcohol, by M. E. Sorel—On the latex of the lacquer-tree, by M. G. Bertrand. The mechanism of the production of lacquer from the exudation from trees of the *Rhus* genus is demonstrated. It is shown that the oxidation of the substance *laccol* only produces the characteristic black insoluble lacquer in the presence of a diastase termed by the author *laccase*.—On parthenogenesis in the Sarcoptidæ. A note by M. E. Trouessart.—On the development of excretory organs in *Amphiuma*, by M. Herbert Haviland Field.—Utilisation of vintage *marcs*, by M. A Muntz. The wine retained by the *marc* is displaced mechanically by water in special cylindrical vessels, and yields a good quality wine practically undiluted. The residual *marc* after treatment is utilised as cattle food.

AMSTERDAM.

Royal Academy of Sciences, April 21.—Prof. van de Sande Bakhuyzen in the chair.—Prof. Schoute made a communication on the regular sections and projections of the hekatomkosædroid (Z^{120}) and the hexakosiœdroid (Z^{600}). The chief results can be gathered from the following table:—

Projections of							Sections of
Z^{600}	v	42	52	56	44	f	Z^{120}
	e	120	130	150	120	e	
	f	80	80	96	78	v	
Z^{120}	v	158	180	160	80	f	Z^{600}
	e	240	282	250	120	e	
	f	84	104	92	42	v	

The four columns of the above represent at the same time the number of vertices, edges and faces of the projections of Z^{600} and Z^{120}, and the number of faces, edges and vertices of the sections of Z^{120} and Z^{600}.—Prof. Kamerlingh Onnes communicated the results of measurements made by Dr. Zeeman in the Leyden laboratory, of the reflection of polarised light on the pole of a magnetised nickel mirror. The so-called null rotation changes its sign at the incidence of 26°, in accordance with Goldhammer's theory. Drude's theory gives a value of 60°.

BOOKS AND SERIALS RECEIVED.

BOOKS.—The Frog: Prof. A. Milnes Marshall, 5th edition (Manchester, Cornish).—Walks in Belgium—the Old Flemish Towns and the Ardennes: edited by P. Lindley (30 Fleet Street).—A Handbook to the Marsupialia and Monotremata: R. Lydekker (W. H. Allen).—A Handbook to the Birds of Great Britain: Dr. R. B. Sharpe, vol. 1 (W. H. Allen).—Flore de France: A. Acloque (Paris, Baillière).—The Camel, its Uses and Management: Major A. G. Leonard (Longmans).—The Country Month by Month: J. A. Owen and Prof. Boulger, June (Bliss).—Elementi di Fiscia: Prof. A. Roiti, vol. 2 (Firenze, Monnier).—An Introduction to the Study of Metallurgy: Prof. W. C. Roberts-Austen, 3rd edition (Griffin).—Électricité Appliquée a la Marine: P. Minel (Paris, Gauthier-Villars).—Étude Expérimentale Dynamique d'une Machine a Vapeur: V. Dwelshauvers-Dery (Paris, Gauthier-Villars).

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